REMARKS/ARGUMENTS

I. Status of the Claims

Claims 1 and 3 are pending. Claim 2 has been canceled without prejudice for future prosecution. The amendment to claim 1 is clerical in nature and does not introduce new matter.

II. The Invention

The invention resides in an adapter plate that converts a vacuum manifold, designed for standard multi-well plates that are commonly used in biochemical laboratories, into one that can be used for columns such as chromatographic columns, filtration columns, and the like. The adapter plate contains an array of male-female-type complementary connectors. Each connector is fitted with a removable plug that seals the connector off when not in use. The adapter plate thus allows the vacuum manifold to be used for as few as one column or as many as the total number of connectors in the adapter plate.

III. The Enclosed IDS

The enclosed Information Disclosure Statement is submitted for purposes of making of record certain patents that demonstrate the meaning and use of the term "interlocking." An explanation of these patents and their bearing on this invention is given below.

IV. Drawings

Formal drawings are enclosed herewith. The objection to the drawings under 37 CFR 1.83(a) is traversed. The male portion of the connector is not a component of the invention and is therefore not required to be shown in the drawings. The recitation of male portions appears only in the preambles to the claims, and the examiner herself has stated (in three separate paragraphs of the Office Action) that the male portions of the connectors are not accorded patentable weight. The only component of the connector that is a component of the invention is the female portion.

For the record, in the "Response to Arguments" portion of the Office Action, the examiner has misread Applicant's description of the "interlocking" connection. The connection referred to is indeed between the female portion and the male portion, and not between the female portion and the through-passage. The two sentences on page 2, lines 2-5, read as follows:

> "The adaptor plate has an array of fittings forming through-passages, each of which has *the female portion* of a LUER-type component or connection *embedded in the passage*. The connection may be a friction fit or an interlocking connection, or a combination of both."

What is *embedded in the passage* is the *female portion* of the connection, not the connection itself. The claims are entirely consistent with the specification in this regard.

V. Responses to the Office Action: Objections

The Examiner has objected to claim 1 for including the word "a" between "terminating in" and "male portions". Applicant has amended claim 1 accordingly.

VI. Responses to the Office Action: Rejections

35 U.S.C. § 112, First Paragraph

The rejection of claims 1 and 3 for failing to meet the written description requirement is respectfully traversed. As explained above, the male portion of the connector is not a component of the invention. The recitation in the preamble of male portions of male-female connectors serves to state how the vacuum manifold of the invention is to be used and, as the examiner knows, intended use is not given patentable weight. Male-female interlocking connectors are well known in the art, with LUER-LOK connectors being a prime example. No one who is familiar with such connectors will be confused by a reference to a female portion of a male-female connector, or by the notion that a component can be constructed that contains the female portion and not the male portion. The requirement that they be shown in the drawings is inconsistent with the examiner's statement (at three locations in the Office Action) that the male portions are not accorded patentable weight. Accordingly, Applicant submits that the requirements of 35 U.S.C. 112, first paragraph are fully met, and withdrawal of the rejection is requested.

35 U.S.C. § 102(b)

To maintain a *prima facie* case of anticipation, the Examiner must demonstrate that each and every element as set forth in the claim is either expressly found or is inherently described in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the ...claim. See MPEP § 2131. Applicant submits that each element of the claims now pending has not been identified in the art presently of record. Therefore, Applicant respectfully traverses.

Claim 3 is rejected under 35 U.S.C. § 102(b) as being anticipated by Limb (U.S. Pat. No. 4,832,842). The Examiner has cited Limb for disclosing, among other things, male and female portions which are allegedly interlocked by an o-ring. In order to define "interlock", the Examiner combined the definitions of "interlock" and "interconnected" found in the Merriam-Webster Collegiate Dictionary. Based on a belief that an o-ring is capable of interlocking, the Examiner asserts Limb as an anticipatory reference.

Applicant respectfully disagrees with the Examiner's assertion for two reasons. First, since the Examiner only consulted a dictionary, the Examiner did not ascertain how "those of skill in the art" used the claim term "interlock" as required by the Federal Circuit. Second, since "interlock", as used by those of skill in the art, does not encompass the use of "o-rings", Limb does not teach the use of the claim term "interlock". Therefore, Limb does not teach each and every element of claim 3 and Limb is not an anticipatory reference.

During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification. MPEP § 2111. The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. Ibid. Prior art references may be "indicative of what all those skilled in the art generally believe a certain term means . . . [and] can often help to demonstrate how a disputed term is used by those of skill in the art." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584, 39 USPQ2d 1573, 1578-

79 (Fed. Cir. 1996). An example of the use of prior art references to explain how "those of skill in the art" use a particular term is provided by In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999).

The primary issue in In re Cortright was the interpretation of the claim term "restore hair growth" in U.S. Pat. App. No. 07/849,191 ("the '191 application"), now U.S. Pat. No. 6,033,676, U.S. Patent Classification ("USPC") Nos. 424 and 514. The PTO took the position that the broadest reasonable interpretation of "restore hair growth" required the invention to return the user's hair to its original state. Cortright at 1467. In order to determine how "those of skill in the art" used the claim term, the Federal Circuit examined three U.S. patents from the same USPC Classes as the '191 application. These patents defined "restore hair growth" as an increase in the amount of hair grown on the scalp, though not necessarily the restoration of a full head of hair. Cortright at 1468. In light of these disclosures, the Federal Circuit held that the usage in the U.S. patents trumped the PTO's broadest reasonable interpretation, and best represented how "those of skill in the art" used the claim term. Therefore, a disputed claim term meaning can be determined by examining how the disputed claim term in used in U.S. patents from the same USPC Class.

Returning to the instant case, the Examiner relied solely on the dictionary definition of "interlock" to construe this term from Applicant's claim 3. There is no evidence in the Office Action that the Examiner looked to any other interpretation source. Since there was no examination of how "those of skill in the art" used the term, the Examiner did not provide the proper analysis of the claim term "interlock".

As noted above, a proper analysis would involve an examination of how "those of skill in the art" used the disputed claim term "interlock". Applicant therefore undertook a search of prior art patents through the USPTO Full-Text Patent Database.[1]

[1] These searches were conducted within U.S. Classification No. 422, which was the Classification number of the instant invention. Searches were conducted to determine if "interlock" or "interlocking" and "o-ring" had ever been used together in the same patent. ("interlock" in the claims, "interlock" in the specification, and "o-ring" in the specification). These searches produced eleven patents.

The goal of these searches was to determine the use of the term "interlock", and whether an "o-ring" had ever been described as an "interlocking" device. The patents located in the searches consistently referred to "o-ring" as a "sealing" device, and never described "o-ring" as an "interlocking" device. Since the use of the claim term "interlock" by those of skill in the art contradicts the Merriam-Webster dictionary definition, the usage by those of skill in the art trumps the dictionary definition of the claim term "interlock".

Two of the patents located in the search best illustrate the differences between "o-ring" and "interlock", as well as the use of "interlock" by those of skill in the art. The first patent is Laska, (U.S. Pat. No. 5,993,745) ("Laska"). Laska teaches a test tube storage tray which comprises a center section and a cover section. The cover section "interlocks" with the center section and, in another embodiment, adds an "o-ring" as a sealing device. Thus, Laska contains both the term "interlock", which is explicitly mentioned in the instant application but not in Limb, as well as the term "o-ring", which is explicitly mentioned in Limb but not in the instant application. The use of "interlock" in the instant application and Laska will be discussed first, followed by a discussion of how Limb and Laska use "o-ring".

Both the instant invention and Laska possess features that "interlock". In the instant invention, the female Luer-type connector attaches/mates to a male Luer-type connector through an interlock in a way that does not require external pressure, *i.e.*, from a vacuum or a clamp. (Page 2, line 2-7; page 3, lines 8-11) While a vacuum can be applied to the system, it is not required for the male-female connectors to hold. In the same way, Laska's center section **3** and cover section **4** are "interlocked". (Column 3, lines 28-32) This "interlock" is facilitated by the snug fit of the cover section rim **7** into the U-shaped recess of the center section rim **9**. (Column 4, lines 1-10). The "interlock" also does not require external pressure from a vacuum or a clamp. (Column 4, lines 1-10). Both references therefore teach an overlapping of materials which do not require external pressure in order to be held together.

Both Laska and Limb disclose "o-rings". In Laska, an "o-ring" is optionally added in order to improve the seal between cover section rim **7** and center section rim **9**. (Column 7, lines 18-30). Note that the "interlock" of the rims is not created by the "o-ring". Rather, the "o-ring" is a sealing device that merely improves the seal formed by the rims. (Column 4, lines 5-6; Column 7, lines 18-19). Similarly, in Limb, the o-ring **60** does not "interlock", or provide overlap with the stem **68**. (Column 2, lines 64-67). Rather, the o-ring is employed as a sealing device. (Column 2, line 65). The sealing provided by "o-rings" in Limb eliminates the need for precision shaping between the other materials involved in the seal. (Column 2, lines 59-63). Therefore, both Laska and Limb disclose "o-rings" as sealing devices, rather than "interlocking" devices.

The second example from the USPTO Patent Database is Babson *et al.*, (U.S. Pat. No. 5,721,141) ("Babson"). This patent discloses a tube washing system which spins the tube **140** with the help of a rotating chuck **122** during the washing process. (Abstract) The tube and rotating chuck are "physically and mechanically interlocked" during this process. (Column 5, lines 34-40) The "interlock" is facilitated by the overlap of three ridges in the tube with three pairs of teeth in the chuck. (Column 5, lines 34-40). While an "o-ring" is mentioned in this patent, it is not used for "interlocking" purposes, but for sealing the drive shaft. (Column 5, lines 4-6). Therefore, Babson provides further evidence that "those of skill in the art" describe the term "interlock" as an overlapping of materials which do not require external pressure and the term "o-ring" as a sealing device, not as an "interlocking" devices.

When Laska, Babson, and Limb disclose the terms "interlock" and "o-ring", they consistently describe an "interlocking" device as one with an overlapping of materials which do not require external pressure, and describe an "o-ring" as a sealing device. Since prior art patents can be used to determine the usage by those of skill in the art, the disputed claim term "interlock" does not encompass, and is not suggested by, an "o-ring". Therefore, Limb does not teach the "interlock" claim term found in claim 3.

Because Limb does not teach each and every claim term in claim 3, Limb is not an anticipatory reference in this case. Therefore, Applicant respectfully requests withdrawal of the rejection.

Even though Limb has been cited only as an anticipatory reference, it is worthy of note that Limb also fails to render the present invention obvious. Since o-rings and interlocking connectors serve entirely different functions and operate in a different way, one does not suggest the other, and the disclosure of a piece of equipment with an o-ring does not render obvious a structure that incorporates a female portion of a male-female *interlocking* connector.

35 U.S.C. § 103(a)

a) Limb in view of Roberts

The rejection of claim 1 as obvious over Limb in view of Roberts *et al.*, (U.S. Pat. No. 6,491,873) ("Roberts") is respectfully traversed. Whatever Roberts et al. disclose, both Limb and Roberts et al. fail to disclose a block that contains the female portion of a male-female interlocking connection.

b) Over Limb in view of Franciskovich and Roberts

The rejection of claim 1 as obvious over Limb in view of Franciskovich *et al.*, (U.S. Pat. No. 5,603,899) and Roberts is likewise traversed for the same reasons.

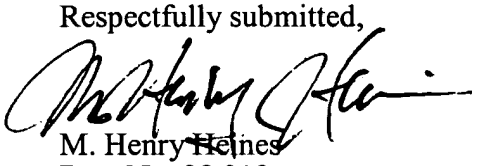
c) Over Limb in view of Franciskovich

The rejection of claim 3 as obvious over Limb in view of Franciskovich *et al.* (U.S. Pat. No. 5,603,899) is likewise traversed for the same reasons.

CONCLUSION

In view of the amendment and the explanations given above, reconsideration of the application is respectfully requested. If the Examiner believes a telephone conference would aid in the prosecution of this case in any way, please call the undersigned at 415-576-0200.

Respectfully submitted,



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